

## REMARKS

1. In response to the Office Action mailed July 12, 2006, Applicants respectfully request reconsideration. Claims 1-7, 9-20 and 68-76 were last presented in the application. In the outstanding Office Action, all claims are rejected. In the above Amendments claims 1-7, 9-18 have been amended. Claims 68-76 have been cancelled, claims 77-104 have been added. Thus, upon entry of this paper, claims 1-7, 9-20 and 77-95 will be pending in this application. Of these 38 claims, three (3) claims (claims 1, 77 and 86) are independent.
2. Based on the above Amendments and following Remarks, Applicants respectfully request that all outstanding objections and rejections be reconsidered, and that they be withdrawn.

### *Art of Record*

3. Applicants acknowledge return of form PTO-1449 filed by Applicants on June 15, 2006, which has been initialed by the Examiner indicating consideration of the references cited therein.

### *Claim Rejections Under 35 U.S.C. 103(a)*

4. The Examiner has rejected claims 1-4, 6, 7, 9, 10, 13, 14, 17, 19 and 20 as being unpatentable over U.S. Patent No. 6,047,074 to Zoels *et al.*, (hereinafter, "Zoels"), in view of U.S. Patent No. 6,231,604 to von Ilberg (hereinafter, "von Ilberg"), in view of U.S. Patent No. 5,884,260 to Leonhard (hereinafter, "Leonhard"), and in view of U.S. Patent No. 5,933,805 to Boss *et al.*, (hereinafter, "Boss"). Applicants respectfully disagree with the Examiner.
5. Without addressing the apparent lack of motivation to combine the references as suggested by the Examiner, Applicants assert that the above rejections are *prima facie* improper because the suggested combination fails to contain each and every element of Applicants' claimed invention without substantial modifications being made to the resulting combination.

6. As set forth in the Manual of Patent Examining Procedure (MPEP) at §2143.03, “to establish *prima facie* obviousness of a claimed invention, all the limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).” Furthermore, “all words in a claim must be considered in judging the patentability of that claim against the prior art.” (See, MPEP §2143.03, citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).)

7. Referring first to Applicants’ claim 1, Applicants assert that the proposed combination fails to contain “an actuator arrangement, configured to provide output stimulation and ...consisting of at least one *intracochlear* electromechanical or purely electric stimulator, *and* at least an additional *extracochlear* electroacoustic, electromechanical, or purely electric stimulator.” (See, Applicants’ claim 1, above.)

8. Von Illberg is directed to a hearing device that provides an alternative to the use of intracochlear stimulation, and which in fact requires a choice between intracochlear or extracochlear stimulation. (See, von Ilberg, col. 3, 26-52.) In fact, as explained below, von Illberg absolutely excludes the use of combinations of both intracochlear and extracochlear stimulation. (See, von Ilberg, col. 3, 26-52.) As such, Von Ilberg teaches away from Applicants’ claimed invention.

9. Von Illberg explains that with “acoustic mechanical stimulation, sound is amplified in various ways and delivered to the inner ear as mechanical energy.... [and] Acoustic mechanical stimulation requires that the *structure of the cochlea, hair cells, and auditory nerve all be intact.*” (See, von Ilberg, col.1, lines 30-36; emphasis added.) In other words, for a patient to receive benefit from a hearing device utilizing acoustical mechanical stimulation, the patient’s inner ear structures must remain functioning and undisturbed. (See, von Ilberg, col. 1, lines 28-38.)

10. However, von Illberg explains that “electrical stimulation functions very differently [from acoustic mechanical stimulation]... Electrical stimulation does not require that the structure of the cochlea and hair cells be intact.” (See, von Ilberg, col. 1, lines 39-46.) “With electrical stimulation, the stimulating electrodes should be placed as close as possible to the nerve endings of the auditory nerve. This occurs optimally when an electrode carrier *is inserted into the cochlea*. As a rule, this procedure results in destruction of the structures of the inner ear which may still be functioning.” (See, col. 1,

lines 47-54; emphasis added) In other words, von Illberg notes that prior art electrical stimulation was provided via implantation of electrodes inside the cochlea, and that this implantation resulted in destruction of the inner ear structures of the cochlea. (See, von Illberg, col. 1, lines 39-54.)

11. Von Illberg is directed to a device that seeks to provide adequate stimulation to the cochlea, without destroying the cochlea. (See, von Illberg, col. 3, lines 26-41.) Von Illberg achieves this goal through a device that uses **extracochlear** electrical stimulation in combination with **extracochlear** acoustical mechanical stimulation. (See, von Ilberg, col. 3, 26-34.) In von Illberg, mechanical stimulation is used to deliver stimulation to the inner ear structures, while a type of extracochlear electrical stimulation is provided such that “the electrical stimulation should be coupled to the cochlea *so that intact structures are not destroyed-the option for electrical stimulation alone at a later time via cochlear implantation should remain.*” (See, von Ilberg, col. 3, lns. 26-41; emphasis added.)

12. Von Illberg also makes it clear that the above recited electrical stimulation is not intracochlear electrical stimulation. Von Ilberg notes that “extracochlear stimulation can be effective, although the results achieved with complete deafness are not comparable to those achieved with intra-cochlear stimulation. *When used in combination with acoustic mechanical stimulation, as in a preferred embodiment, extracochlear electrical stimulation with the residual hearing is sufficient.*” (See, von Ilberg, col. 3, lines 42-52; emphasis added.)

13. Thus, it is clear that von Illberg teaches the use of intracochlear stimulation which absolutely and permanently prevents the use of any type of extracochlear stimulation. (See, von illberg, col. 3, lines 26-41.) Therefore, because von Illberg prevents the use of “at least dual output stimulators, wherein said output stimulators are at least one intracochlear electromechanical or purely electric stimulator, and at least an additional extracochlear electroacoustic, electromechanical, or purely electric stimulator” as recited in Applicants’ claim 1, Applicants assert that von Illberg fails to teach or suggest that which the Examiner asserts.

14. Due to the explicit teachings to the contrary, Applicants submit that the Examiner has continued to assert that von Ilberg teaches a combination of intracochlear and extracochlear stimulation based on facts within the personal knowledge of the Examiner.

Accordingly, under 37 C.F.R. § 1.104(d)(2), Applicants request that should the Examiner maintain this rejection, the Examiner expressly address each of the above points of apparent distinction or provide affidavit(s) or declaration(s) that support this assertion.

15. Applicants further assert that the other art of record, taken alone or in combination, also fail to teach or suggest that which is missing from von Illberg. Therefore, for at least the reasons provided above, Applicants assert that the rejection of claim 1 was *prima facie* improper. Applicants respectfully request that the rejection of claim 1 under §103 be reconsidered and that it be withdrawn.

***New Claim 77***

16. For at least the reasons discussed above with reference to claim 1, Applicants respectfully assert that the cited references, taken alone or in combination, fail to teach or suggest all elements of new independent claim 77.

17. Specifically, the cited references fail to teach or suggest “at least dual output stimulators, consisting of at least one intracochlear electromechanical or purely electric stimulator, and said at least an additional extracochlear electroacoustic, electromechanical, or purely electric stimulator” as recited in Applicants claim 77. Furthermore, Applicants assert that the cited references fail to teach or suggest “an electronic signal processing unit configured to analyze said audio signal and to synthesize said audio signal to generate an artificial speech signal having approximately no input-side interference” as recited in claim 77.

18. Therefore, for at least these reasons, Applicants respectfully submit that claim 77 is patentable over the art of record.

***New Claim 86***

19. Applicants respectfully assert that the cited references, taken alone or in combination, fail to teach or suggest all elements of new independent claim 86. Specifically, the cited references completely fail to teach or suggest “a speech analysis module having a digitally implemented neural network configured to analyze said audio signal with automatic algorithms” as recited in Applicants’ claim 86. Furthermore, the cited references fail to teach or suggest “a speech synthesis module configured to convert said analyzed audio signals into an artificial speech signal” as recited in Applicants’ claim 86.

20. Therefore, Applicants respectfully submit that claim 86 is patentable over the art of record.

***Dependent Claims***

21. The dependent claims incorporate all of the subject matter of their respective independent claims and add additional subject matter, which makes them a *fortiori* and independently patentable over the art of record. Accordingly, Applicants respectfully request that the outstanding rejections of the dependent claims be reconsidered and withdrawn.

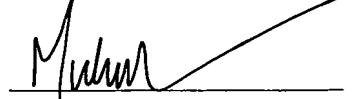
***Conclusion***

22. In view of the foregoing, this application should be in condition for allowance. A notice to this effect is respectfully requested.

23. Applicant reserves the right to pursue any cancelled claims or other subject matter disclosed in this application in a continuation or divisional application. Thus, cancellations

and amendments of above claims, are not to be construed as an admission regarding the patentability of any claims.

Respectfully submitted,



\_\_\_\_\_  
Michael G. Verga  
Registration Number 39,410  
Customer Number: 22,506  
(703) 563-2005

**JAGTIANI + GUTTAG**  
Democracy Square Business Center  
10363-A Democracy Lane  
Fairfax, Virginia 22030  
(703) 591-2664

November 13, 2006